

ovatis vel subrotundatis, 20–40 cm. longis et 20 cm. latis, elobatis vel 1–3-lobatis, lobis lateralibus breviter triangulari-acuminatis, lobis terminalibus gradatim acuminatis vel caudato-acuminatis, basi rotundatis, supra subglabris, subtus tomentosus, nervis 7–9; petiolo variabili, in foliis superioribus 2–5 cm. longo, in foliis inferioribus maturis ad 20 cm. longo, dense villosa-tomentoso; ♂ inflorescentiis paniculatis; ♀ inflorescentiis, racemosis congestis, dense tomentosus; floribus ♂ : sepalis ellipticis, 3.5 mm. longis et 2 mm. latis, dense stellato-tomentosis; staminibus multis, plus quam 120; ♀ floribus: sepalis 4, lanceolatis, acuminatis, 4–4.5 mm. longis, dense stellato-tomentosis; stylis 3, exsertis, recurvatis, stigmatibus piloso-subfimbriatis; fructibus globosis, ad 2 cm. diametro, aculeis dense stellato-tomentosis apice glabris, brunneis; pedicello stellato-tomentoso, 2–4 mm. longo.

KWANGSI: En route Liang-chiang to Pai-shan city, Pai-shan district, *Y. W. Taam 4*, TYPE ♀, Aug. 17–18, 1937, abundant among shrubs on dry, rocky, sandy soil of Chien-kan-shan, near Niu-lo ts'un, erect woody plant, 2 m. high with fragrant, yellow flowers, "P'ao-mu-shu." Shap Man Taai Shan, near Ping Hoh village, S.E. of Shang-sze, Kwangtung border, Shang-sze district, *W. T. Tsang 22132*, ♂, April 17, 1922, abundant in meadow along roadside or in dry clay, woody, 4 ft., fl. yellow. Na Hung, Ling Yün Hsien, *A. N. Steward & H. C. Cheo 356*, May 7, 1933, ♂, shrub, 7 m. with yellow flowers; specimen also with portion of bark, ex Herb. Univ. Nanking.

3. *Mallotus Dunnii* Metcalf sp. nov.

Mallotus Roxburghianus Müll.-Arg. var. *glabra* Dunn in Jour. Linn. Soc. Bot. **38**: 365. 1908; Pax & Hoffmann, Pflanzenr. (Heft. 63) IV. **147**, VII: 173. 1904 *in nota* (as var. *glaber* Dunn); Croizat in Jour. Arnold Arb. **19**: 144. 1938.

FUKIEN: Yenping, Buong-kang Village, *Dunn 1136-HH 3437* (HK, K, AA.)

This material is so distinct that it should not be retained as a variety. Furthermore, the specimen cited above does not have the pubescence characteristic of *Mallotus Roxburghianus* Müll.-Arg. The leaves are small, peltate, palmately 8–10-nerved, subrotund, with 1–3 lobes at the apex, glabrous on both sides with the base of the leaf rotund and the lobes acuminate; the blades are approximately 18 cm. long and 15 cm. wide; the petioles are 8–15 cm. long; the inflorescence is terminal, racemose, with slender pedicels (0.5–3.5 cm. long), with the lowest pedicels distinctly the longest.

The specimen seen by Croizat and myself in the herbarium of the Arnold Arboretum is sterile. The description of the inflorescence is

based on my notes taken in the herbaria of Kew and of the Hongkong Botanical Garden.

4. **Mallotus lotingensis** Metcalf sp. nov.

Mallotus barbatus (Wall.) Müll.-Arg. var. *congestus* [*congesta*] Metcalf in Lingnan Sci. Jour. 10: 487. 1931.

KWANGTUNG: On way to San Kai Tin, Loting, *Ying Tsiang* 1131, Sept. 13, 1928. Sunyi, *Ying Tsiang* 2734, June 17, 1929, in open, along water, shrub. (Both formerly distributed as *M. barbatus* Müll.-Arg.). *Squire* 317 from Hue, Indo-China, a ♂ specimen, probably also represents this species.

Croizat (in Jour. Arnold Arb. 19: 135. 1938), in his discussion under *M. barbatus* var. *pedicellaris* Croizat, has suggested that *M. barbatus* var. *congestus* Metcalf is a form that has sessile or subsessile fruit on a congested inflorescence, and that it is doubtfully conspecific with his new variety, adding that "it is probable that a better knowledge based on more ample collections of Chinese *M. barbatus* will introduce further changes in the treatment and limits of the species."

After making an additional study of this material along with some new material not available in 1930-31, I have come to the conclusion that this is in reality a good species and not a variety. It is much nearer in its relationships to *M. luchenensis* Metcalf from Kwangsi, Hunan, and Kwangtung, than to *M. barbatus* from Yunnan, Szechuan, Annam, and Cochinchina. The leaves, young branches, petioles and inflorescences are densely stellate and soft velvety-tomentose beneath. The ♀ inflorescence is a congested eglandular raceme, and the capsules are sessile, stellate-pubescent, with the spines quite noticeable.

5. **Mallotus luchenensis** Metcalf sp. nov.

Arbor vel suffrutex usque ad 3 m. altus; ramis farinoso-tomentosis, ramulis villosis, dense tomentosis, flavis vel flavo-ferrugineis; foliis late ovatis vel subrotundatis, 15-30 cm. longis, 10-15 cm. latis, 3-lobatis, lobis rare nullis vel uno laterali, lobo terminali triangulari-acuto vel acuminato, lobis lateralibus acutis vel caudato-acuminatis, basi cordatis vel rotundatis vel truncatis, supra, nervis exceptis, subglabris, subtus dense stellato-tomentosis, pilis in foliis maturis albis, in foliis juvenilibus ferrugineis; petiolo usque ad 10 cm. longo, dense tomentoso-pubescente; inflorescentiis terminalibus, elongato-racemosis, ad 30 cm. longis, dense stellato-tomentosis; ♂ inflorescentiis: sepalis ellipticis, stellato-tomentosis; staminibus numerosis; ♀ inflorescentiis elongato-racemosis; sepalis ovatis, stellato-tomentosis; stylis 4, recurvis exsertis: stigmatibus papilloso-fimbriatis; fructibus subglobosis, leviter denseque stellato-

tomentosis, 10 mm. longis latisque; pedicello 6–10 mm. longo, dense tomentoso; calyce et stylis persistentibus; aculeis totis massam unam efformantibus, brunneo-nigris, minute glandulosis, pilis confertis stellato-tomentosis undique indutis.

KWANGSI: Shan Fang, N. Luchen, 1500 ft., *R. C. Ching* 5699, June 6, 1928, TYPE ♀, in open thicket, spreading shrub, 10 ft., with gray bark. KWANGTUNG: Ting Wu Shan, *W. Y. Chun* 6342 ♂ and 6400 ♀ (2 sheets), May 5 and 6, 1928, in open shrub, or light woods; tree 2.5–3 m. high. KWEICHOW: Ad viam Tschenning Huangtsaubam fluminis Houdjiau ho in silva lateris australis, *Handel-Mazzetti* 10364, June 20, 1917; Tuyun, *Y. Tsiang* 5766, July 12, 1930, in dense shade, tree 6 m. high, diam. breast high, 15 cm., sterile specimen.

INDO-CHINA: Tonkin, prov. Santay, *Petelot* 2218, ♀, June, 1939, tree 7–8 m.

This species was formerly confused with *Mallotus barbatus* Müll.-Arg. and its variety *congestus* Metcalf (= *M. lotingensis* Metcalf). It is, however, probably more closely related to *M. lotingensis* from Kwangtung than it is to either the species *M. barbatus* or its variety *pedicellaris* Croizat. This species has leaves similar to *M. barbatus*, but the fruits are short- rather than long-pedicelled, and the capsules are reddish or reddish orange, not yellowish or straw-colored. From *M. lotingensis* it can be distinguished by the pedicelled, not sessile, capsules in loose, not congested, racemes.

6. ***Mallotus philippensis*** (Lam.) Müll.-Arg. var ***reticulatus*** (Dunn)
Metcalf comb. nov.

Mallotus reticulatus Dunn in Jour. Linn. Soc. 38: 365. 1908.

Pax & Hoffmann, in Pflanzenr. (Heft. 63) IV. 147. VII: 184. 1914, have listed *Mallotus reticulatus* Dunn as a synonym of *M. philippensis* Müll.-Arg. *Mallotus reticulatus*, in my opinion, is not typical *M. philippensis* Müll.-Arg. On the other hand, it should not be treated as a distinct species. If *Dunn* 3429 from unexplored western Fukien were the only collection available to me, I might still consider it a good species, but another specimen collected by Ford in Hongkong shows a dentation which is not quite so pronounced. Both specimens, nevertheless, are characterized by coarsely dentate leaves, hardly serrate, as stated by Dunn (l. c.). *Dunn* 3429 has more deeply dentate leaves, which are coriaceous, distinctly and finely reticulate, and with a very peculiar yellowish bloom in addition to the usual red granular glands and pubescence beneath. The specimen is also much more densely pubescent.

The yellowish bloom and prominent reticulate lower surface of the leaves are the most distinctive characteristics.

WESTERN FUKIEN: Wong Ka Chi, *Dunn 164-HH 3429*, TYPE of *M. reticulatus* Dunn (HK, AA). KWANGTUNG: Lung-tau-shan, *LU 12890* (*To & Tsang*) (CCC; fragment, AA). HONGKONG: *Ford* (AA).

One sheet from Futschau (Foochow) collected in 1887, namely *Warburg 5876*, has leaves with a somewhat dentate margin, but these leaves are subcoriaceous, much thinner than those of the typical variety, and lacking the yellowish bloom and the somewhat distinct raised reticulations; hence is placed here with doubt.

Below I am adding a key to characterize and distinguish the species in the "barbatus" group, namely *M. barbatus* Müll.-Arg., *M. barbatus* var. *pedicellaris* Croizant, *M. luchenensis* Metcalf, *M. lotingensis* Metcalf, and *M. Croizatianus* Metcalf.

KEY TO THE "BARBATUS" GROUP OF MALLOTUS

- a. Spines of capsule forming a continuous stratum.
 - b. Capsules yellowish.
 - c. Pedicels short, 1 cm. or less, mostly less; capsules about 12 mm. diam.; branchlets shaggy-tomentose (Yunnan, Szechuan). *barbatus* Müll.-Arg.
 - cc. Pedicels longer, 1-4.5 cm.; capsules 15-16 mm. diam.; branchlets tomentose (Szechuan). . . *barbatus* var. *pedicellaris* Croizat
 - bb. Capsules reddish or reddish orange; branchlets rather shaggy-tomentose (Kwangsi, Kwangtung, Tonkin). . . *luchenensis* Metcalf
- aa. Spines of capsule not forming a distinct stratum but appearing somewhat echinate.
 - b. Capsules about 1 cm. diam. and somewhat congested or confluent in the spike; branchlets shaggy-tomentose (Kwangtung and Annam). *lotingensis* Metcalf
 - bb. Capsules about 2 cm. diam., scattered, not congested or confluent; branchlets shaggy-tomentose (Kwangsi). . . *Croizatianus* Metcalf

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RELCHELA PANICOIDES STEUDEL
GRAMINEAE ENDEMICA EN CHILE¹

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Con una lámina

DURANTE las observaciones sobre algunos géneros de Gramineae representados en Chile, Dr. Agnes Chase nos llamó la atención sobre las características peculiares de *Relchela panicoides* Steudel, haciéndonos ver las posibilidades de reconocer este género mono-específico en su verdadero valor taxonómico y filogénico. La abundancia de material crítico encontrado en el Herbario de Gramíneas del Museo Nacional de los EE.UU. nos indujo a efectuar un estudio sobre el mencionado tema.

Relchela Steudel (20) es un anagrama creado por el autor a base de Lechler, colector de la especie. *Lechlera*, nombre inédito, solo ha sido mencionado por Steudel en correspondencia a botánicos y amigos suyos.

Desde la época de su creación (1854) el género ha sido mal interpretado. Su única especie, *Relchela panicoides* Steudel, descrita en Paniceae, ha sido incluida en el género *Calamagrostis* y sus sinónimos descritos en *Panicum* y *Agrostis*.

Bentham (2: 91) la incluye por primera vez en *Deyeuxia* Clarion (*Lachnagrostis* Trinius), comentando que "*Relchela*, Steud., . . . *Cinnastrum*, Fourn. (at least as to *Deyeuxia poaeformis*, Kunth.), *Deyeuxia mutica*, Wedd., and *D. breviglumis*, Benth., with a few other South-American species, form a little group with a glabrous rhachilla and the awn reduced to a small point." Al mismo tiempo indica *Agrostis sesquivalvis* Desv. (error para *A. sesquiflora* del mismo autor) como sinónimo.

Bentham & Hooker (3: 1153) la menciona como *Deyeuxia*, hoy día considerada sub-sección de *Calamagrostis*, indicando una vez más *Agrostis sesquiflora* como sinónimo.

Hackel (11) la sigue considerando *Calamagrostis* (§ *Deyeuxia*), haciendo notar su anomalía dentro de ella. *Index Kewensis* (15) la anota también bajo *Deyeuxia*, y Dalla Torre & Harms (9) la coloca bajo *Calamagrostis* Adans. Bews (4) adopta la misma opinión de Hackel.

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